

JANUARY 8, 1903.

The 174th regular meeting was held at the residence of Dr. H. G. Dyar, 1512 Twenty-first street, N.W. Dr. Dyar presided, and Messrs. Schwarz, Benton, Kotinsky, Quaintance, Marlatt, Heidemann, Barber, Caudell, Busck, Patten, Simpson, Hunter, Hopkins, Gill, Banks, Warner, and Currie, members, and Messrs. Hinds and Burke, visitors, were also present.

The following officers were elected for the year 1903: President, Mr. D. W. Coquillett; First Vice-President, Mr. Nathan Banks; Second Vice-President, Dr. A. D. Hopkins; Recording Secretary, Mr. Rolla P. Currie; Corresponding Secretary, Mr. Frank Benton; Treasurer, Mr. J. D. Patten. Additional members of the Executive Committee: Dr. H. G. Dyar, Dr. L. O. Howard, and Mr. C. L. Marlatt.

Mr. W. E. Hinds, Field Agent in the Division of Entomology, U. S. Department of Agriculture, was elected a corresponding member.

The retiring President, Dr. Dyar, then delivered his annual address, as follows:

## ANNUAL ADDRESS OF THE PRESIDENT.

### SOME RECENT WORK IN NORTH AMERICAN LEPIDOPTERA.

By HARRISON G. DYAR.

Ten years ago the classification of the Lepidoptera stood essentially as in the time of Linnæus. In Smith's list of 1891 we still have the two large divisions into Rhopalocera and Heterocera, the former corresponding to Linnæus' Papilio, the latter to his Sphinx and Phalæna. While the Sesiidæ and Syntomidæ, placed in Sphinx by Linnæus, have been removed from that group, they were still found immediately following it. Some suggestions on right lines have been made from time to time, such as that of Butler, who, many years ago, claimed a position in the Tineids for the Sesiidæ; but such suggestions have not been generally followed.

Recently it has been shown that the classification of the Lepidoptera must be materially changed to accord with the probable evolution of the families and genera. Fortunately the general order of Linnæus will not have to be greatly modified. The transference of a few families and a division of the group called Phalæna by Linnæus will suffice. The studies of Meyrick, Hampson, Chapman, and Tutt in England, and of Comstock, Packard, Kellogg, Bodine, and the writer in America, have converged to a common general scheme, though the details still differ in the conception of the several authors. This general subject is so fully discussed by Tutt (Brit. Lep., I, chapter ix, 1899) that I will not enter upon it further, but refer to the more special work accomplished by American students.

The last decade has seen the close of the labors of two great students of the butterflies, S. H. Scudder and W. H. Edwards. Dr. Scudder's work is widely recognized as most excellent. It is extremely full in detail and accurate, even in points to which attention had not at the time been directed. If we may presume to criticise this master of his study, we would say that the chief faults are, first, the use of too small characters in defining genera and groups, characters which are either variable or not easily appreciated, together with a certain indefiniteness in synoptic tables which renders them difficult to use; second, generalizations from too few known species, causing specific characters to appear as those of higher groups.

Mr. Edwards has been first and foremost a describer of species. He is responsible for the bulk of the specific names of North American butterflies. That he carried his work too far and named as species a number of forms of only varietal or racial rank is probably true, yet it is difficult to point out just what names should be united. The difficulty is especially apparent in the genus *Argynnis* with its great variety of forms and their almost imperceptible differences. Mr. Edwards named everything in this genus as a species which differed, however slightly, from his known specimens. Nearly everyone agrees that there are too many names, but no two will agree which names are of varietal rank. Mr. H. J. Elwes, of England, tried to improve the names, and later Mr. A. J. Snyder has attempted the same thing. Both seem to have failed. Mr. Edwards not only published descrip-

tions, but most excellent figures of his species. To this is added his widely known work on the larvæ, in which many points of both special and general interest appear. His chief fault is that he never correlated his work. He never published any synoptic tables, though his work is partly systematized by his catalogue. Neither by any one else have the North American butterflies been properly placed together and studied. Scudder's remarkable work covers only the Eastern species, and G. H. French's very excellent little book (published in 1886) has the same range. Dr. W. J. Holland's "Butterfly Book" covers the field, but it is adapted only for beginners, being essentially a picture-book with lamentably meagre text. In nomenclature the greatest possible difference exists between Scudder and Edwards. Scudder applied the rule of priority to generic names rigidly and fully and made many genera. Edwards disregarded the law, using any generic name that happened to be current, and made few genera. In the future a middle course between these courses will probably be adopted. More genera than Edwards recognized will be used, less than Scudder recognized; while the law of priority will have to be followed.

After Scudder and Edwards there remain but few special students of North American butterflies. Dr. Henry Skinner has a good collection, and he has published a paper on the genus *Cænonympha*, which, if followed by others, would give a monographic treatment of our butterflies which is much needed. But Dr. Skinner has not evinced a disposition to follow up this work with vigor, and he has not studied the larvæ, a prime requisite for a specialist in the group. Mr. Wm. Beutenmüller has given a good paper on the old genus *Anthocharis*, though he is not specially a student of the butterflies.

In the Sphingidæ almost nothing has been done in the period we are considering. Mr. Beutenmüller has published the life histories of some species, but his descriptions are altogether too brief. Dr. Packard has given us a few life histories and pointed out the good field awaiting the student who would study our larvæ on the lines laid down by Weismann and Poulton; but no one has seriously attempted this.

In the Saturnians scarcely more has been done than in the Sphingidæ. Mr. Neumoegen and the writer "revised" the

group, Grote has published a work in Germany which refers to American species, and Packard has published on the larvæ, giving details of their peculiar structure and armature. He is still at work on the Saturnians, as a continuation of his monumental work on the "Bombycine Moths," of which the Notodontidæ formed the first part, so that the next few years will probably see a great advance in this group. The title of Dr. Packard's work reminds us that we wish it were founded on a better system of classification. Packard's own system is open to criticism, viewed either from a venational, pupal, larval, or oval standpoint, and we regret to have such an excellent and comprehensive work proceed on a somewhat uncritical foundation.

Sir George Hampson, of England, in his studies on moths, and especially in the "Lepidoptera Phalænæ," the series of monographs of the world fauna being published by the British Museum, incidentally treats of American species. We think his work the best of its kind that we have studied. It suffers a little from haste, more especially in his earlier papers, and from the use of characters which are subject to variation, especially the smaller differences in venation. In using his book to determine Syntomidæ we have been occasionally misled, even so far as to make synonyms, owing to these defects.

The last ten years of American entomology have been nearly uninfluenced by the personality of Mr. A. R. Grote. Since he took up his residence abroad he has been unable to contribute much to our subject. Formerly the leading student of North American Noctuidæ he has lately turned his attention to more general studies. How much we have lost in the expatriation of this able man, with his clear and concise statements and his almost intuitive perception of specific characters, it is hard to say. His place has been taken by Dr. John B. Smith, a patient, careful man, who has given lengthy descriptions of numerous new species, usually accompanied by synoptic tables and a revision of the group to which they belong. We are fortunate to have this work done in so capable a manner. Yet two tendencies in the work may be criticised. The descriptions are often vague from the very effort at completeness, and this vagueness is increased by the too discursive character of the introductory remarks accompanying the revisions of groups. The synoptic tables seem somewhat

overdone. I would not say that the characters used are sometimes imaginary, yet they verge upon this definition. Certainly it is at times difficult for the general student to appreciate them when he has the specimens before him. As written they always seem to present good contrasts. Dr. Smith has not cultivated a knowledge of larval forms, and his work is not checked by breeding. This renders his idea of a species the more likely to become mechanical and lead him to describe as species forms not entitled to that rank.

The Notodontidæ have been ably monographed and the result beautifully published, at Government expense, by Dr. A. S. Packard, a world-renowned zoologist. Dr. Packard has treated his subject in the broadest possible manner, making great generalizations and deducing philosophical arguments from his study of these moths. The work is in general commendable, though we have ventured to pick some small faults. We cannot but regard it as a pity that Dr. Packard should waste his philosophical arguments in trying to prove the transmission of acquired characters and the direct effect of the environment on structure. This seems to us so much lost labor. For practical use his monograph suffers from the weakness of the synoptic tables, as we have had occasion to remark (*Can. Ent.*, xxviii, 189, 1896). Somehow Dr. Packard seems never to become personally acquainted with the species of which he treats, if I may use such a term. This may be due to lack of time or to too equal reliance on information furnished by persons of varying responsibility; but, whatever the cause, it leads him to be able to commit such errors as describing the same larva as that of two different moths and never detecting the incongruity.

Dr. Packard's early studies on Geometridæ hardly come within the range of our present view. His successor has been Dr. Geo. D. Hulst. Dr. Hulst has published many new species and genera, and has revised the family with full generic tables. His work, undoubtedly brilliant in certain respects, is seriously marred by his habitual carelessness. Nothing that Hulst has done can be absolutely relied upon, for fear that a thing, apparently most evident, may be found to be vitiated by some blunder that he knew much better than to commit. It is a pity that his types are not with some student able and willing to go over and verify his

work. Once verified, it would become thoroughly valuable. Dr. Hulst favored the use of secondary sexual characters, and he not only employed them in generic definition, but used them as prime characters in his synoptic tables. This is an inconvenience in practice, for a species cannot be named unless both sexes are at hand in the material for determination, which is often not the case. However, this did not prevent Dr. Hulst from founding new genera on a female specimen only. He simply supplied the missing male characters from his fertile imagination (*e. g.* genus *Pterotæa*, Trans. Am. Ent. Soc., xxiii, 349, 1896). Yet in spite of defects, Dr. Hulst is badly missed, for he leaves no successor in the study of the Geometridæ.

In regard to the higher Tineids, the Pyralids have received very little attention. We have had no student devoting himself to them as a specialty. Fortunately Dr. C. H. Fernald is now engaged in this study, though his work is as yet unpublished. Dr. Hulst published sundry new species in the Phycitinæ. His article on this group was published in 1890, and hardly comes within our view. It has been followed by the first part of Ragonot's great work, published in the Romanoff Memoirs, which includes the Phycitinæ of the world. We have not studied the subject enough to be able to criticise this book. The Crambinæ and Pterophoridæ have been acceptably treated by Dr. Fernald in small separate publications. We do not like the use of a series of alternatives based on shades of color, as in the separation of the species of the genus *Pterophorus*. But in general the work serves admirably for the purposes of determination. The Tortricidæ have remained practically untouched for ten years, only certain new species having been described. In the Tineids, Lord Walsingham's work on the North American species has gradually ceased. His work is so excellent that it may well serve as a model to our future workers, both in its careful accuracy and its conservatism. With its cessation there seemed at first no successor, but lately three men have taken up the subject, Dr. W. G. Dietz, Mr. W. D. Kearfott and Mr. August Busck. Their work is as yet too small in quantity for much criticism, but seems to have been begun rightly. We fear that Dr. Dietz has a tendency to make species on too small characters, judging by his *Pigritia* paper. Mr. Kearfott, too, has

shown something of the same tendency in his first paper. The next few years will certainly show marked advances in our knowledge of the Tineids.

This review indicates that we need certain work in the immediate future. A monograph of the Butterflies with practicable synoptic tables, critically revising both genera and species; comprehensive work on the larvæ of the Sphingidæ; studies on the larvæ of the Noctuidæ, to supplement Dr. Smith's work on the adults, which should be continued; a review of Dr. Hulst's work on the Geometridæ, which might most profitably take the form of a monograph, giving practicable synoptic tables to species to supplement Dr. Hulst's generic ones; determinative tables for Tortricidæ, both generic and specific. Dr. Fernald ought not to delay the preparation of such a badly needed paper; continued descriptions of new species of Tineids to make the extent of our fauna known to us. We hope to see these subjects soon taken up.

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At the conclusion the society offered Dr. Dyar a vote of thanks for his address. The address was discussed by Messrs. Schwarz, Banks, Gill and Marlatt.

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—Mr. Banks then presented the following paper:

#### NOTES ON BRACHYNEMURI OF THE *B. FEROX* GROUP.

(PLATE III.)

By NATHAN BANKS.

In examining some recent additions to my collection of Myrmeleonidæ, I was struck more forcibly than ever before with the constancy in size and shape of the male appendages. Various species are now known to me from a considerable number of localities, yet there is no distinct variation in the general appearance of these appendages. Therefore it seems that they are of considerable importance in the separation of species. In the *B. ferox* group I have had various specimens that differed from the known forms very slightly in colorational points but prominently in the appendages; therefore I believe these forms are distinct species.